

CLAIMS: *Please amend the claims according to the status designations in the following list, which contains all claims that were ever in the application, with the text of all active claims.*

1-5 (CANCELED)

6. (NEW) An apparatus for thawing frozen biological fluids utilizing heating plates and oscillatory motion to enhance heat transfer by mixing comprising:

(A) a first heating plate contacting one generally flat surface of one or more plastic bags containing frozen liquid to be thawed;

(B) a second heating plate approximately parallel to said first heating plate and contacting the flat surface of said bag(s) opposite said surface contacted by said first heating plate, said heating plates being made of heat conductive material;

(C) means to hold said bag(s) in position to be thawed;

(D) means to squeeze said plastic bag(s) to be thawed between said first and second heating plates with a force of about 0.5 to 5 pounds;

(E) means to apply heat to the back surfaces of said heating plates which are the surfaces opposite the heating surfaces of said heating plates in contact with said bag(s) to be thawed;

(F) means to sense the temperature of said heating plate heating surfaces where they contact said bag(s) being thawed;

(G) means to control the temperature of said heating plate heating surfaces at a safe thawing temperature of about 37 to 42C where they contact said bag(s) to be thawed;

(H) means to oscillate one of said heating plates about 0.1 to 0.5 inch relative to said other heating plate at a frequency of about 0.5 to 10 Hz in a direction perpendicular to said heating plate heating surfaces to promote mixing of the thawing fluid;

(I) means to keep said heating plates in contact with said bags to be thawed and to limit the oscillating force to about 0.1 to 2 pounds while oscillations are occurring;

(J) means to adjust the spacing of said heating plates to accommodate bags of different thicknesses; and

(K) means to determine when said frozen liquid is completely thawed,

whereby frozen biological fluids such as blood plasma may be quickly and safely thawed.

7. (NEW) The apparatus of claim 6 wherein said heating plates are flat.
8. (NEW) The apparatus of claim 7 wherein said heating plates are flat heat pipes, said heat pipes utilizing internal vapor condensation heating to maintain said heating plate heating surfaces at a controlled isothermal thawing temperature of about 37 to 42C.
9. (NEW) The apparatus of claim 6 wherein said heating plates are concavely shaped to approximately conform to the convexly shaped surfaces of said plastic bag(s), providing increased contact area for more efficient heat transfer.
10. (NEW) The apparatus of claim 9 wherein said heating plates are concavely shaped heat pipes, said heat pipes utilizing internal vapor condensation heating to maintain said heating plate heating surfaces at a controlled isothermal thawing temperature of about 37 to 42C.
11. (NEW) The apparatus of claim 6 wherein said heating plates are made of aluminum sheet.

12. (NEW) The apparatus of claim 6 wherein said means to hold said bag(s) in position to be thawed is gravity, and

(A) wherein said means to squeeze said plastic bag(s) to be thawed between said first and second heating plates is the weight of the upper heating plate, and

(B) wherein said means to adjust the spacing of said heating plates to accommodate bags of different thicknesses is an adjustable hinge position, when said heating plates are horizontal.

13. (NEW) The apparatus of claim 6 wherein said means to hold said bag(s) in position to be thawed are bag hanging posts when said heating plates are vertical.

14. (NEW) The apparatus of claim 6 wherein said means to squeeze said plastic bag(s) to be thawed between said first and second heating plates is a constant force spring, and

(A) wherein said means to adjust the spacing of said heating plates to accommodate bags of different thicknesses is said constant force spring, when said heating plates are vertical.

15. (NEW) The apparatus of claim 6 wherein said means to apply heat to said back surfaces of said heating plates are etched foil stick-on heaters.

16. (NEW) The apparatus of claim 6 wherein said means to sense the temperature of said heating plate heating surfaces where they contact said bag(s) being thawed are thermistors.

17. (NEW) The apparatus of claim 6 wherein said means to control the temperature of said heating plate heating surfaces is an electronic temperature controller.

18. (NEW) The apparatus of claim 6 wherein said means to oscillate one of said heating plates is a motor-operated bellcrank.

19. (NEW) The apparatus of claim 6 wherein said means to keep said heating plates in contact with said bag(s) to be thawed is a dashpot in an oscillating linkage.

20. (NEW) The apparatus of claim 6 wherein said means to determine when said frozen liquid is completely thawed is a thermistor in thermal contact with said bag being thawed but insulated from said heating plate heating surface.

DRAWINGS: Drawings 1-3 were objected to as being unclear because of too much shading in them. New drawings 1-3 are included in accordance with 37 CFR 1.121(d), to overcome the excessive shading objection. The new drawings are labeled as "Replacement Sheet" or "New Sheet" in the top margin, as required.